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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/944,511	08/31/2001	David A. Lomas	106287	2645

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EXAMINER

GRIFFIN, WALTER DEAN

ART UNIT

PAPER NUMBER

1764

DATE MAILED: 03/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/944,511

Applicant(s)

LOMAS, DAVID A.

Examiner

Walter D. Griffin

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-20 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-20 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Reopening of Prosecution

Prosecution on the merits of this application is reopened on claims 1 and 3-20, considered unpatentable for the reasons indicated below.

Applicant is advised that the Notice of Allowance mailed is vacated. If the issue fee has already been paid, applicant may request a refund or request that the fee be credited to a deposit account. However, applicant may wait until the application is either found allowable or held abandoned. If allowed, upon receipt of a new Notice of Allowance, applicant may request that the previously submitted issue fee be applied. If abandoned, applicant may request refund or credit to a specified Deposit Account.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 17, 19, and 20 are rejected under 35 U.S.C. 102(b) as being anticipated by Harandi et al. (US 5,372,704).

The Harandi reference discloses a process for converting a hydrocarbon feed stream. The process comprises contacting a hydrocarbon feed with zeolite catalyst particles in a first cracking reactor to produce a cracked product. The cracked product is then separated from the catalyst and

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passed to a fractionating column. A fraction is recovered from the fractionating column and is passed to a second reactor where the fraction contacts catalyst particles to produce an upgraded product. The catalyst particles used in the second reactor are the same as those in the first reactor and are obtained from the first reactor. The upgraded product is then recovered. The fraction sent to the second reactor may have an initial boiling point within the claimed range. See column 4, line 65 through column 6, line 14; column 9, lines 16-23; column 10, lines 15-22 and 48-61; and column 11, lines 11-58.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1, 3-16, and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Harandi et al. (US 5,372,704).

The Harandi reference discloses a process for converting a hydrocarbon feed stream. The process comprises contacting a hydrocarbon feed with zeolite catalyst particles in a first cracking reactor to produce a cracked product. The cracked product is then separated from the catalyst and passed to a fractionating column. A naphtha fraction is recovered from the fractionating column and is passed to a second reactor where the naphtha fraction contacts catalyst particles to produce an upgraded product. Conditions in the second reactor are selected to convert less than 30 wt% of the feed to this reactor to lighter components. The catalyst particles used in the second reactor are the same as those in the first reactor and are obtained from the first reactor. The upgraded product is then recovered. The naphtha fraction sent to the second reactor may have an initial boiling point within the claimed range. Because of this, the naphtha fraction would necessarily contain C5 to C8 olefinic and saturated hydrocarbons. See column 4, line 65 through column 6, line 14; column 9, lines 16-23; column 10, lines 15-22 and 48-61; and column 11, lines 11-58.

The Harandi reference does not disclose that the conditions in the second reactor are such that they promote at least a 5% net yield increase in aromatics, does not disclose that a greater proportion of hydrocarbons with carbon numbers of 5-8 undergo hydrogen transfer reactions than cracking reactions and does not disclose that hydrogen transfer reactions predominate over cracking reactions in the second reactor. The reference also does not disclose the claimed specifics of the conversions such as the conversion of olefins to isoparaffins and aromatics and the reduction of sulfur and nitrogen compounds.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Harandi by operating the second reactor at conditions to produce products as claimed and to promote and inhibit the reactions as claimed

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because conditions disclosed by Harandi for the second reactor are such that cracking reactions are less than 30%. Additionally, the conditions disclosed by Harandi for the second reactor overlap those disclosed by applicant in the specification. Therefore, one would choose conditions within the ranges disclosed by Harandi in order to promote reactions other than cracking. By doing so, one would obtain results similar to those claimed.

Regarding claim 18, the Harandi reference does not disclose the hydrotreating step. However, Harandi does disclose that feeds that have a large amount of sulfur can be hydrotreated to reduce the sulfur concentration along with a reduction in octane number. Therefore, if the reduction in octane number can be tolerated, it would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of Harandi by hydrotreating the feed to the second reactor in order to reduce the sulfur concentration of the feed so that the final product will have a correspondingly lower sulfur concentration.

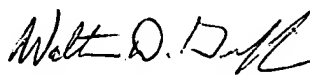
Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Walter D. Griffin whose telephone number is (571) 272-1447. The examiner can normally be reached on Monday-Friday 6:30 to 4:00 with alternate Fridays off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Walter D. Griffin
Primary Examiner
Art Unit 1764

WG

February 28, 2005



Glenn Caldarola
Supervisory Patent Examiner
Technology Center 1700